Name:

## at1118paper: Complete the Square (v416)

### Example

By completing the square, find both solutions to the given equation:

$$x^2 - 56x = -780$$

Add $\left(\frac{-56}{2}\right)^2$, which equals 784, to both sides of the equation.

$$x^2 - 56x + 784 = 4$$

Factor the left side.

$$(x - 28)^2 = 4$$

Undo the squaring. We need to consider both $\pm\sqrt{4}$.

$$\begin{array}{rcl} x - 28 = -2 & \text{or} & x - 28 = 2 \\ x = -30 & \text{or} & x = -26 \end{array}$$

### Question 1

By completing the square, find both solutions to the given equation:

$$x^2 - 34x = 936$$

### Question 2

By completing the square, find both solutions to the given equation:

$$x^2 + 24x = -119$$

## Question 3

By completing the square, find both solutions to the given equation:

$$x^2 + 18x \;=\; 760$$

## Question 4

By completing the square, find both solutions to the given equation:

$$x^2 + 8x \;=\; 384$$

## Question 5

By completing the square, find both solutions to the given equation:

$$x^2 - 52x \;=\; -352$$

## Question 6

By completing the square, find both solutions to the given equation:

$$x^2 + 54x \;=\; 360$$